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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/063,786	05/13/2002	William D. Doan	121710	1626

23413 7590 06/28/2005

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EXAMINER
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WANG, JIN CHENG

ART UNIT	PAPER NUMBER
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2672

DATE MAILED: 06/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/063,786	<b>Applicant(s)</b> DOAN ET AL.	
	<b>Examiner</b> Jin-Cheng Wang	<b>Art Unit</b> 2672	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 30 March 2005.
- 2a) ☐ This action is **FINAL**.      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-31 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Acknowledgement of Interview***

Upon careful examination of the submitted material, the Examiner noted that the Exhibit A as described in the Declaration filed on 3/30/2005 is missing. The Examiner called the applicant's representative, Jeff Waters, on 6/14/2005 for information and applicant e-mailed the Examiner a copy of the Exhibit A which is used as evidence for the actual reduction to practice of the claimed invention.

### ***Response to Amendment***

The amendment and declaration filed on 3/30/2005 has been entered. Claims 1, 19, 20, 21, and 22 have been amended. Claims 1-31 are pending in the application.

### ***Response to Arguments and Declaration***

The declaration filed on 3/30/2005 under 37 CFR 1.131 has been considered but is ineffective to overcome the Taguchi reference.

The evidence submitted is insufficient to establish a reduction to practice of the invention in this country or a NAFTA or WTO member country prior to the effective date of the Taguchi reference. An error is found in the declaration filed by applicant regarding the Exhibit A to show the conception of the invention. It is stated that Exhibit A is a copy of an invention disclosure prepared by applicant on October 8, 2001. However, it is found that Exhibit A was not prepared on October 8, 2001, it was prepared on January 31, 2000. Moreover, with regard to reduction to practice, it is stated that Fig. 2 of this application as shown in Exhibit A was diligently, actually

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reduced to practice. However, it cannot be determined that the claimed invention was actually reduced to practice prior to October 8, 2001 because Fig. 2 alone cannot be used to establish an actual reduction to practice without sufficient description of what is actually implemented in Fig. 2. Applicant's complete specification filed on 5/13/2002 as related to Fig. 2 is only partially described in the Exhibit A as disclosed on January 31, 2000. The Examiner agrees to Applicant's statement in the declaration that Exhibit A shows conception of the invention on January 31, 2000 since the Exhibit A was disclosed on January 31, 2000. However, Fig. 2 in Exhibit A is only a GUI prototype and thus can be only construed as evidence for the conception of the invention, rather than as evidence for the actual reduction to practice. Furthermore, no evidence whatsoever has been provided in the declaration with regard to the October 8, 2001 date of actual reduction to practice. In other words, applicant's declaration provides no evidence to the October 8, 2001 date of actual reduction to practice. Although Fig. 2 in Exhibit A as disclosed on January 31, 2000 is substantially the same as the Fig. 2 in applicant's drawing filed on 5/13/2002, it cannot be construed as evidence for the actual reduction to practice because it cannot be determined that the functionality of Fig. 2 is actually reduced to practice on or prior to January 31, 2000 at the time that the Exhibit A was written and a sufficient description related to Fig. 2 as specifically related to the computer implementation of the claimed invention is not provided, and thus lacking adequate support for the claimed invention. In conclusion, the Examiner asserts that the evidence submitted is insufficient to establish a reduction to practice of the invention prior to the effective date of the Taguchi reference. Therefore, the Examiner maintains the rejection set forth in last Office Action.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-8, 10-11, 13, and 15-18 are rejected under 35 U.S.C. 102(e) as being anticipated by Taguchi U.S. Pat. No. 6,795,589 (hereinafter Taguchi).

Re Claims 1 and 19:

Taguchi teaches a method for displaying axial images, the method comprising:

Receiving a reconstructed axial image, wherein said reconstructed axial image includes a pre-selected number of completed reconstructed slices, a slice thickness and an interval value (*e.g. Taguchi teaches a reconstruction unit which reconstructs image data on the basis of the real data and virtual data stored in a storage unit wherein the data having a pre-selected number of reconstructed slices, a slice thickness and an interval value and a graphical user interface for setting reconstruction conditions such as setting **slice thickness**, **slice pitch**, the **number of images**; column 5, 7-9 and Figs. 13-15);*

Creating a reformatted axial image in response to said reconstructed axial image (*Taguchi teaches in column 7 reconstructing at least two images with different slice thickness and interval values and selecting one of reconstructed axial images and rendering the reformatted axial image in a display. Taguchi teaches creating a reformatted axial image with the changed slice*

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*thickness, slice pitch, the radius  $R$  of the field of view, the effective width  $W$  of the field of view, and other parameters, in response to the reconstructed real data of the axial image or the virtual data created from the real data of the axial image; see column 5, 7-9 and Figs. 13-15; Taguchi further discloses in column 9 a resize selection by selecting the names of regions to be examined using pull-down menus for the sizes of small, medium and large images), wherein said creating includes:*

*Modifying said slice thickness in response to user slice thickness input (Modifying the slice thickness using the user interface. Taguchi teaches the number of images is automatically set in accordance with the **slice pitch and slice thickness** changes; column 9 and Figs. 13-15); and*

*Updating said interval value in response to user interval value input (Taguchi teaches in column 8 changing the helical pitch and setting **slice pitch** which defines the distance between the center of each reformatted slice or the distance between the central lines of adjacent slices; column 9 and Figs. 13-15);*

*Displaying said reformatted axial image in response to user display input (e.g., displaying a 3-D rendering image on the basis of the image data; see column 5, 8-9 and Figs. 13-15).*

Claim 2:

The claim 2 encompasses the same scope of invention as that of the claim 1 except additional claim limitation of the user interval value input including an explicit value for the

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interval value. However, Taguchi further discloses the claim limitation of the user interval value input including an explicit value for the interval value (Figs. 13-15).

Claim 3:

The claim 3 encompasses the same scope of invention as that of the claim 1 except additional claim limitation of the user slice thickness input including an explicit value for the slice thickness. However, Taguchi further discloses the claim limitation of the user slice thickness input including an explicit value for the slice thickness (Figs. 13-15).

Claim 4:

The claim 4 encompasses the same scope of invention as that of the claim 1 except additional claim limitation of receiving at least one additional completed reconstructed slice and displaying the reformatted axial image in response to the user display input and to the additional completed reconstructed slice. However, Taguchi further discloses the claim limitation of receiving at least one additional completed reconstructed slice and displaying the reformatted axial image in response to the user display input and to the additional completed reconstructed slice (Figs. 13-15 and column 7-9).

Claim 5:

The claim 5 encompasses the same scope of invention as that of the claim 4 except additional claim limitation of receiving at least one additional completed reconstructed slice being performed in response to a user selecting a resume acquire button. However, Taguchi further discloses a button, which resume and acquire reconstructed slice (Figs. 13-15 and column 7-9).

Claim 6:

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The claim 6 encompasses the same scope of invention as that of the claim 1 except additional claim limitation of receiving, creating and displaying being performed in an interactive mode. However, Taguchi further discloses the claim limitation of receiving, creating and displaying being performed in an interactive mode (Figs. 13-15 and column 7-9).

Claim 7:

The claim 7 encompasses the same scope of invention as that of the claim 1 except additional claim limitation of a render option selection. However, Taguchi teaches a click of the confirm button which render the axial image on a display device.

Claim 8:

The claim 8 encompasses the same scope of invention as that of the claim 1 except additional claim limitation of a navigation mode selection. However, Taguchi further discloses a navigation buttons.

Claim 10:

The claim 10 encompasses the same scope of invention as that of the claim 1 except additional claim limitation of an image location selection. However, Taguchi further discloses selecting image location such as the center X, and Y coordinates (Figs. 13-15).

Claim 11:

The claim 11 encompasses the same scope of invention as that of the claim 1 except additional claim limitation of a resize selection. However, Taguchi further discloses a resize selection by selecting the names of regions to be examined using pull-down menus for the sizes of small, medium and large images (column 9).

Claim 13:



The claim 13 encompasses the same scope of invention as that of the claim 1 except additional claim limitation of saving the reformatted axial image in a reformat format. However, Taguchi further discloses saving the image data in the data storage unit (column 7-8).

Claims 15-16:

The claim 15 or 16 encompasses the same scope of invention as that of the claim 1 except additional claim limitation of changing/setting slice thickness by a pre-selected value. However, Taguchi further discloses the claim limitation of changing/setting slice thickness by a pre-selected value (Figs. 13-15 and column 7-9).

Claims 17-18:

The claim 17 or 18 encompasses the same scope of invention as that of the claim 1 except additional claim limitation of changing/setting interval value by a pre-selected value. However, Taguchi further discloses the claim limitation of changing/setting interval value by a pre-selected value (Figs. 13-15 and column 7-9).

Claims 1 and 19 are also rejected under 35 U.S.C. 102(e) as being anticipated by He et al. U.S. Pat. No. 6,141,398 (hereinafter He).

Re Claims 1 and 19:

He teaches a method for displaying axial images, the method comprising:

Receiving a reconstructed axial image, wherein said reconstructed axial image includes a pre-selected number of completed reconstructed slices, a slice thickness and an interval value (*e.g. column 4, lines 37-67, column 5, lines 1-67, column 6, lines 1-67 and column 7, lines 1-8*);

Creating a reformatted axial image in response to said reconstructed axial image (e.g. column 4, lines 37-67, column 5, lines 1-67, column 6, lines 1-67 and column 7, lines 1-8), wherein said creating includes:

Modifying said slice thickness in response to user slice thickness input (*Modifying the slice thickness using the interactive user interface. He teaches the selection by an operator the number of slices and the slice thickness wherein the number of slices and the slice thickness are being displayed; Figs. 3-4; column 4, lines 37-67, column 5, lines 1-67, column 6, lines 1-67 and column 7, lines 1-8*); and

Updating said interval value in response to user interval value input (*Modifying the slice thickness using the interactive user interface. He teaches the interactive selection by an operator the number of slices and the slice thickness wherein the number of slices and the slice thickness are being displayed; Figs. 3-4; column 4, lines 37-67, column 5, lines 1-67, column 6, lines 1-67 and column 7, lines 1-8*);

Displaying said reformatted axial image in response to user display input (*He teaches the interactive selection by an operator the number of slices and the slice thickness wherein the number of slices and the slice thickness are being displayed; Figs. 3-4; column 4, lines 37-67, column 5, lines 1-67, column 6, lines 1-67 and column 7, lines 1-8*).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 9, 12 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taguchi U.S. Pat. No. 6,584,166 (hereinafter Taguchi), in view of Argiro et al. U.S. Patent No. 5,986,662 (hereinafter Argiro).

The claim 9 or 12 or 14 encompasses the same scope of invention as that of the claim 1 except additional claim limitation of annotation and measurement selection and a secondary capture format.

Taguchi is silent to the claim limitation of the annotation and measurement selection.

However, Argiro teaches the claim limitation of the annotation and measurement selection (Argiro column 19-22 and 24 for annotation measurement with a ruler).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated the annotation and measurement selection into the computer tomographic system having a user interface including selections for reconstructing the image data for display in a display device (Taguchi column 5-6 and Argiro the Abstract).

Such modification would have been required for additional functionality and thereby suggesting the obvious modification of Taguchi.

Claims 20-22, 23-26, 28, and 30-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taguchi U.S. Pat. No. 6,584,166 (hereinafter Taguchi) in view of Taguchi U.S. Patent No. 5,825,842 (hereinafter Taguchi-1998).

Re Claims 20-22:

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(a) Taguchi teaches a method for displaying axial images, the method comprising:

Receiving a reconstructed axial image, wherein said reconstructed axial image includes a pre-selected number of completed reconstructed slices, a slice thickness and an interval value (e.g. Taguchi teaches a reconstruction unit which reconstructs image data on the basis of the real data and virtual data stored in a storage unit wherein the data having a pre-selected number of reconstructed slices, a slice thickness and an interval value and a graphical user interface for setting reconstruction conditions such as setting **slice thickness, slice pitch, the number of images**; column 5, 7-9 and Figs. 13-15);

Creating a reformatted axial image in response to said reconstructed axial image (Taguchi teaches in column 7 reconstructing at least two images with different slice thickness and interval values and selecting one of reconstructed axial images and rendering the reformatted axial image in a display. Taguchi teaches creating a reformatted axial image with the changed **slice thickness, slice pitch**, the radius  $R$  of the field of view, the effective width  $W$  of the field of view, and other parameters, in response to the reconstructed real data of the axial image or the virtual data created from the real data of the axial image; see column 5, 7-9 and Figs. 13-15; Taguchi further discloses in column 9 a resize selection by selecting the names of regions to be examined using pull-down menus for the sizes of small, medium and large images), wherein said creating includes:

Modifying said slice thickness in response to user slice thickness input (Modifying the slice thickness using the user interface. Taguchi teaches the number of images is automatically set in accordance with the **slice pitch and slice thickness** changes; column 9 and Figs. 13-15); and

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Updating said interval value in response to user interval value input (*Taguchi teaches in column 8 changing the helical pitch and setting **slice pitch** which defines the distance between the center of each reformatted slice or the distance between the central lines of adjacent slices; column 9 and Figs. 13-15*);

Displaying said reformatted axial image in response to user display input (*e.g., displaying a 3-D rendering image on the basis of the image data; see column 5, 8-9 and Figs. 13-15*).

(b) However, Taguchi does not implicitly teach that a storage medium storing instructions for execution by the processing circuit for the method.

(c) Taguchi-1998 discloses a reconstruction processor implemented in software wherein the reconstruction processor stores the programmable instructions (Taguchi-1998 column 7).

(d) It would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated a storage medium for storing execution codes for the method of Taguchi because Taguchi teaches a reconstructing unit and a GUI controller 117 and thus suggesting that these units are implemented in software (Taguchi column 5-6).

(e) Such modification would have been required for implementing Taguchi's method is software stored in a storage medium and thereby suggesting the obvious modification of Taguchi.

Claim 23:

The claim 2 encompasses the same scope of invention as that of the claim 22 except additional claim limitation of the user interval value input including an explicit value for the

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interval value. However, Taguchi further discloses the claim limitation of the user interval value input including an explicit value for the interval value (Figs. 13-15).

Claim 24:

The claim 24 encompasses the same scope of invention as that of the claim 22 except additional claim limitation of the user slice thickness input including an explicit value for the slice thickness. However, Taguchi further discloses the claim limitation of the user slice thickness input including an explicit value for the slice thickness (Figs. 13-15).

Claim 25:

The claim 25 encompasses the same scope of invention as that of the claim 22 except additional claim limitation of receiving at least one additional completed reconstructed slice and displaying the reformatted axial image in response to the user display input and to the additional completed reconstructed slice. However, Taguchi further discloses the claim limitation of receiving at least one additional completed reconstructed slice and displaying the reformatted axial image in response to the user display input and to the additional completed reconstructed slice (Figs. 13-15 and column 7-9).

Claims 26, 28, 30 and 31:

The claim 26 or 28 or 30 or 31 encompasses the same scope of invention as that of the claim 22 except additional claim limitation of a network. However, Taguchi further discloses a workstation having a preprocessor 106 sending data to the data storage unit via a network connection (Fig. 4 and column 4-5).

Claims 27 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taguchi U.S. Pat. No. 6,584,166 (hereinafter Taguchi) and Taguchi U.S. Patent No. 5,825,842 (hereinafter Taguchi-1998) in view of Argiro et al. U.S. Patent No. 5,986,662 (hereinafter Argiro).

The claim 27 or 29 encompasses the same scope of invention as that of the claim 26 or 28 except additional claim limitation of internet.

Taguchi and Taguchi-1998 are silent to the claim limitation of the internet.

However, Argiro teaches the claim limitation of the internet (Argiro the Abstract).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated the internet into the computer tomographic system for reconstructing the image data stored in a storage unit wherein the computer tomographic system of Taguchi can be connected to the internet (Taguchi column 5-6 and Argiro the Abstract).

Such modification would have been required for sending data to a remote server for data storage and thereby suggesting the obvious modification of Taguchi and Taguchi-1998.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

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will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jin-Cheng Wang whose telephone number is (703) 605-1213. The examiner can normally be reached on 8:00 - 6:30 (Mon-Thu).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mike Razavi can be reached on (703) 305-4713. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

jcw



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